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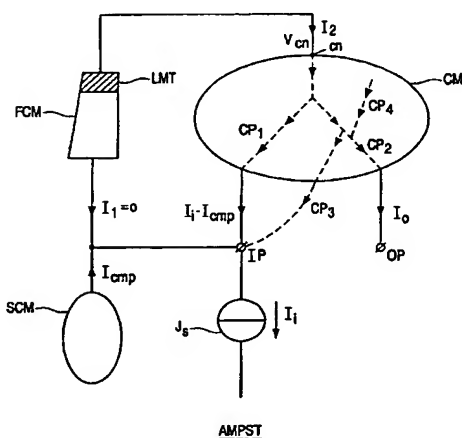
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[Continued on next page]

(54) Title: MEANS FOR LIMITING AN OUTPUT SIGNAL OF AN AMPLIFIER STAGE

(57) **Abstract:** An electronic circuit is provided which can autonomously handle an input current ( $I_i$ ) having a relatively wide dynamic range without being overdriven. The electronic circuit comprises an amplifier stage (AMPST) having an input (IP) for receiving the input current ( $I_i$ ) and an output (OP) for supplying an output current ( $I_o$ ), such that, during operation, the strength of the output current ( $I_o$ ) increases in response to an increasing strength of the input current ( $I_i$ ) as long as the strength of the input current ( $I_i$ ) has not exceeded an input reference level. The strength of the output current ( $I_o$ ) is kept approximately constant when the strength of the input current ( $I_i$ ) has exceeded the input reference level but has not exceeded a further input reference level. The strength of the output current ( $I_o$ ) decreases in response to an increasing strength of the input current ( $I_i$ ) when the strength of the input current ( $I_i$ ) has exceeded the further input reference level. The amplifier stage (AMPST) may comprise a current mirror (CM) having an input which forms the input (IP), an output which forms the output (OP), and a common node (cn). The amplifier stage (AMPST) further comprises first control means (FCM) having an input connected to the input (EP), and an output connected to the common node (cn).

First control means (FCM) controls a current ( $I_2$ ) to the common node (cn) and a voltage ( $V_{cn}$ ) at the common node (cn). The first control means (FCM) comprises limiting means (LMT) for limiting the current ( $I_2$ ) when the value of the input current ( $I_i$ ) has exceeded the input reference level. Then both the input and the output currents ( $I_i$  and  $I_o$ ) are limited. In order to avoid a saturation situation of a current source ( $I_s$ ) which supplies a current ( $I$ ) to the input (EP), the amplifier stage (AMPST) may comprise second control means (SCM) for supplying a compensation current ( $I_{cmp}$ ) to the input (IP) when the input signal ( $I_i$ ) has exceeded the input reference level. The current mirror (CM) comprises first ( $CP_1$ ) and second ( $CP_2$ ) current paths which form the core of the current mirror (CM), as is generally known. The decrease in response to an increasing strength of the input current ( $I_i$ ) when the strength of the input current ( $I_i$ ) has exceeded the further input reference level is implemented by a third current path ( $CP_3$ ) which takes away current from the second current path ( $CP_2$ ). Optionally, to avoid that the value of the output current ( $I_o$ ) can become too low, a fourth current path ( $CP_4$ ) may be implemented which applies current to the second current path ( $CP_2$ ). The inventive electronic circuit may be advantageously applied in all electronic systems (like CD-apparatus) which need means to limit a maximum output signal.

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